

Docket No. 243021US2RD

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: Shoji OTAKA

SERIAL NO: NEW APPLICATION

GAU:

FILED: HEREWITH

EXAMINER:

FOR: FREQUENCY CONVERTER AND RADIO COMMUNICATION APPARATUS

**INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97**

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

**REFERENCES**

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

**RELATED CASES**

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

**CERTIFICATION**

- ☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

**DEPOSIT ACCOUNT**

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: Shoji OTAKA

SERIAL NO.: New Application

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FOR: FREQUENCY CONVERTER AND RADIO COMMUNICATION APPARATUS

**STATEMENT OF RELEVANCY**

**Reference AW on Form PTO-1449:**

This paper shows a mixer including LC tank circuits. However, the LC tank circuits do not operate as matching circuit and resonates at image frequency. The proposed LC tank circuits resonate at 3 times of LC frequency. Furthermore, the proposed mixer topology with LC tank circuits are different from the conventional one.

**Reference AX on Form PTO-1449:**

This paper shows a basic mixer topology which comprises of transconductance amplifiers and current switches. However, the conventional topology does not include the LC tank circuits between the transconductance amplifiers and the current switches.

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. <b>243021US2RD</b>		SERIAL NO. <b>NEW APPLICATION</b>	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT <b>Shoji OTAKA</b>			
				FILING DATE <b>HEREWITH</b>		GROUP	
<b>U.S. PATENT DOCUMENTS</b>							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						
<b>FOREIGN PATENT DOCUMENTS</b>							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES                  NO		
	AO						
	AP						
	AQ						
	AR						
	AS						
	AT						
	AU						
	AV						
<b>OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)</b>							
	AW	A. ZOLFAGHARI, et al., "A 2.4GHZ 34Mw CMOS Transceiver for Frequency-Hopping and Direct-Sequence Applications," ISSCC 2001 Digest, pp.418-419					
	AX	K. L. FONG, et al., "Monolithic RF Active Mixer Design", IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS-II: ANALOG AND DIGITAL SIGNAL PROCESSING . Vol. 46, No. 3, March 1999, pp. 231-239					
	AY						
	AZ					<input type="checkbox"/> Additional References sheet(s) attached	
Examiner					Date Considered		
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							